Section I (Amendments to the Claims)

Please amend claims 2, 4 and 45, as set out in the following listing of the claims 1-45 of the application.

1. (Original) A sensor for determining the presence of an analyte in a test sample, said sensor comprising:

a nanoparticulate membrane comprising nanoparticles of at least one inorganic oxide of an element selected from Group IA, IIA, IIIA, IVA, IB, IIB, IIIB, IVAB, VB, VIB, VIIB or VIIIB of the Periodic Table, and wherein an oxidoreductase and an electrochemical activator are diffusibly dispersed in said nanoparticulate membrane.

2. (Currently amended) The ~~sensor~~ membrane according to Claim [[1]] 12, wherein the oxidoreductase is selected from the group consisting of glucose oxidase, hydrogen peroxidase, horseradish peroxidase, xanthine oxidase, cholesterol oxidase, hydrogen hydrogenase, lactate dehydrogenase, glucose dehydrogenase, NADH dehydrogenase, sarcosine oxidase, lactate oxidase, alcohol dehydrogenase, hydroxybutyrate dehydrogenase, glycerol dehydrogenase, sorbitol dehydrogenase, malate dehydrogenase, galactose dehydrogenase, malate oxidase, galactose oxidase, xanthine dehydrogenase, alcohol oxidase, choline oxidase, xanthine oxidase, choline dehydrohenase, pyruvate dehydrogenase, pyruvate oxidase, oxalate oxidase, bilirubin oxidase, glutamate dehydrogenase, glutamate oxidase, amine oxidase,
NADPH oxidase, urate oxidase, cytochrome C oxidase, and actechol oxidase.

3. (Original) The sensor of claim 1, wherein the electrochemical activator is a polymeric redox mediator capable of transferring electrons between the analyte and an electrode present in the sensor.

4. (Currently amended) The ~~sensor~~ membrane according to Claim [[3]] 13, wherein the oxidoreductase is covalently linked to the polymeric redox mediator by cross-linkages.

5. (Previously presented) The sensor according to Claim 1, wherein the element selected from

Group IA, IIA, IIIA, IVA, IB, IIB, IIIB, IVAB, VB, VIB, VIIB or VIIIB of the Periodic Table is selected from the group consisting of aluminum, silicon, magnesium and zinc.

6. (Original) The sensor according to Claim 1, wherein the thickness of the membrane ranges from 250 to 500um.

7. (Original) The sensor according to Claim 6, wherein the size of the nanoparticles ranges from 10 nm to 1um.

8. (Original) The sensor according to Claim 1, wherein the membrane further comprises a polymeric binder.

9. (Original) The sensor according to Claim 8, wherein the polymeric binder is a polymer or copolymer comprising monomer units selected from the group consisting of vinyl pyridine, vinyl imidazole, acrylamide, acrylonitrile, and acrylhydrazide and acrylic acid.

10. (Original) The sensor according to Claim 1, further comprising: a chamber for holding the test sample, said chamber being bounded at least between a working area on a working electrode and a working area on a reference electrode, wherein the oxidoreductase and the electrochemical activator is coated on the working area of the working electrode.

11. (Original) The sensor according to Claim 10, wherein the working electrode comprises a material selected from the group consisting of gold, carbon, platinum, ruthenium dioxide, palladium, and conductive epoxies.

12. (Original) An electrically non-conductive, nanoparticulate membrane comprising nanoparticles of at least one inorganic oxide of an element selected from Group IA, IIA, IIIA, IVA, IB, IIB, IIIB, IVAB, VB,VIB, VIIB or VIIIB of the Periodic Table, and wherein an oxidoreductase enzyme and an electrochemical activator are diffusibly dispersed in said nanoparticulate membrane.

13. (Original) The membrane of claim 12, wherein the electrochemical activator is a polymeric redox mediator capable of transferring electrons.

14. (Previously presented) The membrane of claim 12, wherein the element selected from Group
IA, IIA, IIIA, IVA, IB, IIB, IIIB, IVAB, VB, VIB, VIIB or VIIIB of the
Periodic Table is selected from the group consisting of aluminum, silicon, magnesium and zinc.

15. (Original) The membrane of claim 12, wherein the thickness of the membrane ranges from 250 to 500pm.

16. (Original) The membrane of claim 12, wherein the size of the nanoparticles ranges from 10 nm to 1um.

17. (Original) The membrane of claim 12, wherein the membrane further comprises a polymeric binder.

18. (Original) The sensor according to Claim 17, wherein the polymeric binder is a polymer or copolymer comprising monomer units selected from the group consisting of vinyl pyridine, vinyl imidazole, acrylamide, acrylonitrile, and acrylhydrazide and acrylic acid.

19. (Previously presented) A process for producing a non-conductive, nanoparticulate membrane, said process comprising:

mixing an electrochemical redox mediator with an oxidoreductase and nanoparticles of an inorganic oxide of an element from Group IA, IIA, IIIA, IVA, IB, IIB, IIIB, IVAB, VB, VIB, VIIB or VIIIB of the Periodic Table to form a nanocomposite ink; and

applying said nanocomposite ink onto a substrate.

20. (Original) The process of claim 19, wherein said nanocomposite ink is applied according to a predetermined pattern.

21. (Original) The process of claim 20, wherein said nanocomposite ink is applied by screen-printing.

22. (Original) The process according to claim 19, wherein the mixing further comprises mixing a polymeric binder into the nanocomposite ink.

23. (Original) The process according to claim 19, wherein the concentration of the electrochemical activator in the nanocomposite ink is about 15mg/ml.

24. (Original) The process according to claim 19, wherein the concentration of enzyme in the nanocomposite ink is about 0.2 mg/ml.

25.-44. (Cancelled)

45. (Currently amended) The ~~sensor~~ membrane according to claim [[1]] 12, wherein the ~~sensor~~ membrane is adapted for determination of glucose concentration.